AMENDMENTS TO THE CLAIMS

1. (Original) A system for plasma processing of a workpiece, the system comprising:

a power generator assembly for exciting gas into a plasma;

a process chamber for processing the workpiece placed therein;

a plasma tube for delivering plasma exhaust from said plasma tube into said process chamber;

a supplemental ion source, located proximate said process chamber;

said supplemental ion source, when activated, thereby enhancing the ion content of said plasma exhaust;

a baffle plate assembly, disposed between said plasma tube and the workpiece, in said process chamber; and

isolation means for shielding the workpiece from electric field potentials in a sheath created by activation of said supplemental ion source.

2. (Original) The system of claim 1, wherein said isolation means further comprises:

said baffle plate assembly being interposed between a primary plasma discharge and the workpiece, said primary plasma discharge resulting from activating said supplemental ion source.

3. (Original) The system of claim 2, wherein the workpiece is mounted upon pins located within said process chamber.

4. (Original) The system of claim 1, wherein said baffle plate assembly further comprises:

an upper baffle plate having a first plurality of holes formed therethrough; and

a lower baffle plate having a second plurality of holes formed therethrough, said lower baffle plate being separated from said upper baffle plate by an interior plenum;

said second plurality of holes each having a first diameter at one end thereof and a second diameter at the opposite end thereof, wherein said first diameter is larger than said second diameter.

5. (Original) The system of claim 4, wherein:

said second plurality of holes define inwardly tapering inner surfaces within said lower baffle plate, beginning at said first diameter and tapering inwardly to said second diameter.

6. (Original) The system of claim 5, wherein:

said second plurality of holes comprise a frustoconical section and a cylindrical section.

7. (Original) The system of claim 4, further comprising:

a plurality of channels, running through said lower baffle plate, said plurality of channels capable of containing a liquid coolant circulating therethrough.

8. (Original) The system of claim 4, wherein said upper baffle plate comprises one of quartz, sapphire, ceramic or sapphire-coated quartz.

9. (Original) The system of claim 4, wherein said lower baffle plate is comprised of anodized aluminum.

10. (Original) The system of claim 4, further comprising:

an impingement disk, disposed atop said upper baffle plate, said impingement disk allowing a plasma discharge to impinge thereupon and be directed through said first plurality of holes.

11. (Currently Amended) A baffle plate assembly for a plasma processing system, comprising:

an upper baffle plate having a first plurality of holes formed therethrough; ~~and~~

a lower baffle plate having a second plurality of holes formed therethrough, said lower baffle plate being separated from said upper baffle plate by an interior plenum;

said second plurality of holes each having a first diameter at one thereof and a second diameter at the opposite end thereof, wherein said first diameter is larger than said second diameter; and

a plurality of channels, running through said lower baffle plate, said plurality of channels capable of containing a liquid coolant circulating therethrough, wherein said plurality of channels run in a generally V-shaped configuration through said lower baffle plate.

12. (Original) The baffle plate assembly of claim 11, wherein:

said second plurality of holes define inwardly tapering inner surfaces within said lower baffle plate, beginning at said first diameter and tapering inwardly to said second diameter.

13. (Original) The baffle plate assembly of claim 12, wherein:

said second plurality of holes comprise a frustoconical section and a cylindrical section.

14. (Canceled)

15. (Original) The baffle plate assembly of claim 11, wherein said upper baffle plate comprises one of quartz, sapphire, ceramic or sapphire-coated quartz.

16. (Original) The baffle plate assembly of claim 11, wherein said lower baffle plate is comprised of a conductive material.

17. (Original) The baffle plate assembly of claim 16, wherein said conductive material is anodized aluminum and said lower baffle plate is grounded.

18. (Original) The baffle plate assembly of claim 11, wherein said first plurality of holes and said second plurality of holes are aligned with one another.

19. (Original) The baffle plate assembly of claim 11, further comprising:

an impingement disk, disposed atop said upper baffle plate, said impingement disk allowing a plasma discharge to impinge thereupon and be directed through said first plurality of holes.

20. (Canceled)